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University of Toronto Engineering Society

THE CANNON

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the Cannon is a publication of the University of Toronto Engineering Society. It is published (almost) monthly, to announce Eng Soc events, discuss faculty and university matters, and present current and technical information of interest to engineering undergraduates.

the Cannon encourages submissions; please type or print legibly.

Comments on *the Cannon* or on articles appearing therein are appreciated. The editors will make every effort to publish such material, but reserve the right to edit for brevity. The opinions presented herein are not necessarily those of the Engineering Society.

Subscriptions to THE CANNON are available if desired. *Call Julie at 978-2917.* Anyone interested in helping with THE CANNON is most welcome. We are located in Room B670, Sandford Fleming Building, 10 King's College Road, Toronto.

PROFESSIONAL EXPERIENCE YEAR (PEY)

....Today's PEY Students
....Tomorrow's Engineering Leaders !!!

Put your education to work....
Apply your first 2 years of academic studies to the world of industry in order to give you a focus for your remaining 2 years at school.

The Professional Experience Year(PEY), a non-compulsory, co-operative education program, offers excellent industrial experience to engineering students during a one-time only 16-month work period. This Program is an entirely new concept of the traditionally-known co-operative education and is available only to students of the Faculty of Applied Science and Engineering who have successfully completed their 2nd year of studies and wish to obtain industrial experience before continuing into 3rd year. The successful students are placed in industry in May immediately on completion of their 2nd year and work till September of the following year.

In the seven years since it was introduced, PEY has proven to be an extremely positive experience for those students who have participated in the program. The 16-month commitment period offers the student both an introduction to the workings of the real world of engineering, as well as the opportunity to gain invaluable experience in related areas of business such as the development of interpersonal, and oral and written communication skills, report writing, seminar presentations ,and even supervision of students who work the traditional, short 4-month work periods. Once the initial training period is completed, the student becomes a member of the real work team and generally performs in the role of a junior engineer.

Some of the participating companies are IBM, GM, Atomic Energy, De Havillan, Bell Northern Research and Spar Aerospace.

Brochures are available on request. For more information, contact the Program Director, Room 157A, Galbraith Building, #978-3132.

Dalita Berejikian,
Director,
Professional Experience Year.

UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE AND ENGINEERING

PART-TIME POSITIONS AVAILABLE

SEVERAL PART-TIME POSITIONS ARE AVAILABLE FOR UNDERGRADUATE ENGINEERING STUDENTS IN OUR HIGH SCHOOL LIAISON PROGRAM.

*WOULD LIKE TO EARN SOME EXTRA MONEY?

*ENJOY MEETING HIGH SCHOOL STUDENTS ?

* HOURS TO SUIT YOUR TIMETABLE

* RATE OF PAY $5.50 TO $6.00 PER HOUR

PLEASE CONTACT:

SALLY CUMMING
MANAGER, STUDENT SERVICES
FACULTY OFFICE
GB 157A

September, 1988.

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EMERGENCY CONTACT SERVICE

This is a special note for all student parents who are attending U of T on the St. George Campus. This year, the Women's Centre is going to continue providing an Emergency Contact Service for student parents. Student parents can be contacted in the case of an emergency which involves their children. The students can leave a copy of their schedule, as well as the name of any places commonly frequented during study hours or breaks) with the Women's Centre. The Women's Centre phone number can be given to the student parent's babysitter, school or daycare service for their use in an emergency. The Women's Centre will then locate the student and pass on any information known about the emergency.

Please note that there is no charge for this service, and also that this is not a daycare centre or a babysitting facility. For further information, or if you'd like to fill out an information sheet for this service, drop by the 1Women's Centre at 49 St. George Street (or you can call 978-8201 for further details).

Carlos Iglesias
CIV 9T0

HartHouse food services

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- FOR LUNCH
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- FOR DINNER
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Monday - Friday
☐ *Dining Room* ☐
noon-2 pm & 5:30-7:30 pm
☐ *Lounge* ☐
noon-2 pm & 4:30-8 pm

Sunshine F!rosh

Sandra, 18, a naturally curly brunette, is an aspiring Industrial Engineer who enjoys swimming, tennis and horseback riding. She loved Orientation and is having a great time in Engineering. She especially likes the male/female ratio.

Catching A Few Rays.

Look out your window. If it's sunny, go outside. If it's hot remove your clothes. Put on shades. Apply lotion to your body. There will be parts you can't reach. Find someone to help. Offer to return the favour. Turn on the radio. Place a beer within easy reach. Now lie down. Close your eyes. Give your brain the day off. That's what catching a few rays is all about.

Molson Canadian
What Beer's All About.

ORIENTATION

Orientation? Thank God it's over!! Orientaion took a lot of time, work and effort but it paid off. Tuesday morning began in a somewhat disorderly fashion, however, things quickly fell into place with Cary and Stephen leading the Preliminary Hazing outside Con Hall.

Approximately 630 F!rosh attended the Official Welcoming with more than half of them remaining for the entire day. Although 630 seems like a lot of F!rosh, 850 first year students were admitted into the faculty this year, so where were the other 200?

An added feature this year was the pizza lunch served at the departmental gatherings which was arranged in conjunction with the Department of Athletics. This served as the successful tactic to keep most of the group together for the F!rosh Picture *and City Walkaround* lead by Stephen Dobson with highlights including the invasion of the "Evil" SAC office and the crossing of Queen's Park Crescent "in single file".

Shinerama, as usual, was a success with the total amounts raised yet to be announced.

The main event however, was the First Annual F!rosh Night at the Ukranian National Federation Hall sponsored by Labatts Ontario Breweries. This event was held in place of the traditional Free Beer Night as a response to the increased number of underage F!rosh. Although there was some groaning about cancelling Free Beer Night, the orientation committee was consoled with some free beer for them. The night was scheduled to start at 7:00 pm, but many anxious f!rosh (engineers, nurses and rehabs) arrived as early as 6:00 pm. People were dancing and drinking and generally having a great time. Miraculously, the crowd of over 600 calmed down at 9:00 pm for the performance by Mik Mandel, the Hypnotist *(see review for more* details about the show). The night ended rather well, however the Engineering Society is awaiting the invoices for the damages incurred.

Classes began and as usual, f!rosh participation dwindled for the remaining events. Friday night's Football Blues victory wasn't as well attended as we had hoped considering Varsity Season Tickets were placed in all the F!rosh Kits yet the f!rosh did manage to get a Blues Brother and a male cheerleader to sit on my lap.

We were al pleased with the new couch and newspaper box collected at the Scavenger Hunt by the Devo team.

At Hart House Farm a good time was had by all and the water wasn't all that bad.

On Monday, over 200 F!rosh and upper classmen headed off to Exhibition Stadium for the Jays vs. Tigers Baseball Game.

At this point I'd like to ask the F!rosh for any suggestions for next year, and I want to thank all of the Orientation Committee for a "Job Well Done!"

Cosy
Orientation
Chairperson

By far, the highlight of Orientation was the Mighty Skule Cannon. The Cannon Guard looked majestic and properly menacing as they carried the Cannon into Con Hall. Their holy and all-powerful Black hard hats, along with the awesome sight of the Mighty Skule Cannon itself, had a profound and everlasting effect on each F!rosh fortunate enough to be there.

The LGMB then led the entire auditorium in an emotional rendition of Godiva - which all of the F!rosh then knew by heart. At the appropriate time, the Mighty Cannon performed magnificently. The resounding hang brought joy to the heart of every engineer within earshot, and terror to the hearts of the feeble minded artsies - their shrieks of terror were heard as far away as the Erindale Campus.

For the Mighty Skule Cannon alone, Orientation would have been an unforgettahle moment in any F!rosh's life. But the Orientation Committee, infinite wisdom and heroic selflessness had planned a whole lot more. They gave the F!rosh an opportunity to dye an arm purple. The University Walkahout gave the F!rosh a chance to show their purple arm to the world.

But, Orientation was more--it was a pilgrimage of discovery and honour(horror?). The F!rosh learnt many new techniques in road-crossing and safety as well as the effects of a rush-hour traffic jam on urhan automobilists, and terrorization through the use of mass choirs.

The walk-about was successful in showcasing the talent, ability and superiority of U of T Engineering over all the other faculties and colleges to the City of Toronto and the rest of the country through the multitude of newspaper reporters and television cameras that covered the various events.

The pilgrimage took the engineers-to-he to City Hall where they, along with the LGMB, took part in a cermony of Secular Baptisni in the fountain at Nathan Phillip's Square. The clear water cleansed all souls, preparing them for careers as engineers.

The walk-ahout was fittingly rounded out by that most heautiful of ceremonies--Gumhy worship on the centre island of University Avenue. 650 purple-armed, yellow-clad F!rosh clutching yellow hardhats and howing in praise of Gumhy was truly an awe-inspiring sight.

Thanks, Orientation Committee '88, from the class of 9T2.

Richard Fernandes
F!rosh Group G

A message to the class of 9T2 from Bill McMullen :

"Your next four years can be the most meaningful of your life. It is a time of establishing your basic technical and engineering 'know-how' which is so critical in this rapidly changing world. Academic success is essential but there are other benefits almost as valuable. Friendships, development of leadership and social skills, learning to work with others on team projects, and through student societies, making a contribution to the community: Make the most of it, and then in 1992 we will welcome you into the Alumni, whose 25000 members still maintains the Spirit and tradition of SKULE."

Bill McMullen, 3T5
President, E.A.A.

ENGINEERING SOCIETY ANNOUNCEMENTS

CONSTITUTIONAL REVIEW

The Constitution and By-Laws of the Engineering Society havc been under review for over a year, and the review is almost completed now. The proposed changes will be presented at the Annual General Meeting of the Society on October 26th, 1988 at 5:00 p.m. in Room GB119. Copies of the new Constitution will be available for any interested engineering students two weeks prior to the AGM.

The principal changes in the Constitution include the Officer Structure and job description as well as Committee Election Procedures.

The "Officers" previously have consisted of the President, V.P. Administration, V.P. Activities, Treasurer and Secretary. The change proposed combines the positions of Treasurer and V.P. Administration into a new position called V.P. Finance. The V.P. Finance is responsible for all financial matters of the society including budgets and checking the books which our Administrative Assistant completes.

A new officer position is also proposed, called the V.P. External. This V.P. is responsible for the Professional Development Committee, High School Liaison, Computer Committee, and for any other external Society matters including ESSCO (Engineering Students Societies Council of Ontario) and CCES (Canadian Council of Engineering Students).

The second major constitutional change regards Committee Chair Elections. Problems have arisen in the past with the "stacking" of elections. This most often results in an unfair situation and creates tension between classes or groups of students. In order to make the elections fair, it has been proposed that specified procedures be followed for committee elections. These procedures define who is eligible to vote at our election. Eligibility requires the voter to be a member of the committee in question. Membership means that you were a member the previous year or you have signed up two weeks in advance to be on that committee (notice will be clearly given of this sign-up deadline).

PRESIDENT'S MESSAGE

HULLO EVERYONE!

WELCOME BACK TO SKULE !

I hope that you all had a good summer (earning lots of $$$). I guess that just about now people are starting to get behind, having quizzes, problem sets, lab reports, etc. I hope that no one has had any midterms yet!?

Anyways... I guess my message for this month is to just read this CANNON and to find out what everyone in the EngSoc is organizing. There are lots of events coming up, and you might as well attend them and get involved because you know you'll get behind anyhow!

If you have any questions about anything, or if you have any suggestions about improving what we do, please come and tell us. The Engineering Society is here for you, so if you're interested at all, don't sit on your 'ass' and think about it--do something about it!!!

Good luck on your midterms, etc., and don't study TOO hard--try to have some fun too.

See ya around.

Keren Morehead

President

ANNUAL GENERAL MEETING

The Annual General Meeting of the Engineering Society will be held on Wednesday, October 26th, 1988 at 5:00 p.m. in GB119.

All Engineering Students are welcome to attend. The auditor's report will be presented for 1987-1988, as well as the Constitutional Review.

Copies of both documents will be available at the Engineering Society Office two weeks prior to the meeting for anyone who is interested. Please contact Our Administrative Assistant, Julie, for copies.

NOTICE TO ALL ENGINEERING STUDENTS

The Engineering Computing Facility provides almost all computational resources for undergraduate and graduate students. The Facility includes 12 DEC Micro VAX II's and III's running Ultrix, two Honeywell XPS-100's running UNIX, several microcompulers and over 100 terminals. In addition, ECF operates an IBM 4341 and 60 IBM PC-AT's as part of the Centre for Computer Integrated Engineering.

There have been remarkably few instances of Engineering students abusing these resources. Nevertheless, a few students have created some difficulties by interfering with the normal operations or by permitting someone else to use, improperly, their password. A password is the private property of a particular student and any misuse of it is the responsibility of that student.

For your information, the Faculty has adopted the following scale of sanctions for computer offences:

- a letter of censure in the student's file
- restricted access to computer facilities
- loss of access to computer facilities
- dismissal from a course
- suspension from the Faculty for one year

In addition, the Faculty reserves the right to recover costs attributable to an abuse of a computer system.

The above sanctions have also been adopted by the Faculty of Arts and Science.

G. W. Heinke
Dean
Faculty of Applied Science and Engineering

September, 1988

OKTOBERFEST !

Are you ready for the roadtrip of 1988 ? To Kitchner, where tents full of people, music, and BEER, await your arrival! Who ever enjoys the Brunswick House atmosphere will definately enjoy what OKTOBERFEST has to offer. Except this time you won't have Rockin' Irene screeching "Roll Out the Barrel" or "Eine Prosit!", instead you'll have some real German beer drinking music to help you sway side to side and off your bench.

Friday, October 14th is the date set to carry all you ale and party thirsty engineers to the blissfulness of OKTOBERFEST. The buses leave Sandford Fleming at approxiamately 5:30 p.m., so that way you can feast on pizza and lighten those spirits at SUDS before we leave. Departure from Kitchener is at about 1:00 a.m., that way we will probably return to SF at about 2:30 a.m. Anyone who feels so inclined can feel free to crash in the Atrium or the near vicinity. The festive beer hall that we'll be visiting is Bingeham Hall, a hall renowned for its university crowd and blurry eyed fun. The golden throat charmer will pour all night (at least by Ontario standards anyhow) and the tunes will play all night. So come out and experience some real German culture.

Tickets will be $10.00 which will include your return bus ride and your entry into Bingeham Hall. Tickets will be available in the Atrium Oct. 10th till the 14th.

Bring your friends, and some festive spirits and lets roadtrip to OKTOBERFEST !

Your Social Chairman,

Steffen Waite

SAC ANNOUNCEMENTS

I was pretty depressed after the infamous SAC Budget Meeting in September (dubbed 'Meeting From Hell, Part II'). It was not that it went seven hours that got me down, it's what we didn't accomplish in that quarter of a day. What failed was a motion to remove the salary of the Executive Assistant from the budget.

First, a little background...

In keeping with tradition, the Executive Assistant (EA) reports to and assists the SAC President. The term of employment is usually one year, the same as the mandate of each President. In most recent cases, the EA has been a personal friend of the President. The salary of an EA is about $20,000 per year.

I see a number of problems with the current EA arrangement.

Having a person paid $20,000 just to help the President seems like a gross waste of resources. Surely there is important work to be done in other areas. But, the temptation is for a President to keep their EA close by since he/she is, to an extent, a personal servant. Also, the fact that EA's tend to come and go with each administration seems a bit silly. Surely it would be better if the officers had a professional staff person who had been around for a few years to help ease the transition in the Spring. This person would have tremendous knowledge about the University and SAC, which would be of great use to the new Executive. Also, can we really justify the air of patronage that surrounds the hiring of the EA? SAC is a Students' Council, not the federal government!

The issues surrounding this position are really somewhat complex, and I think that they need to be examined carefully. Unfortunately, it is difficult for each President not to succumb to the temptation of hiring a friend for one year. Also, since the Executive Committee completely controls hiring (according to the By-Laws), the Board generally has no way to change the situation. But, our opportunity came at the budget meeting. Because the previous EA resigned, the Board had the opportunity to remove the salary from the budget before another one could be hired. This would force an examination and justification of the position. But, it didn't fly.

It would take a truly honourable President to do this examination while he has the opportunity to hire (a friend) into a 20K personal servant job. Maybe it will happen nonetheless.

Peter Mabee
SAC Rep.

Advance tickets are available in the EngSoc for only $3.00!

REMEMBER F!rosh: You received Season's Tickets in your F!rosh Kits, so it's free for you.

All Engineers: Don't forget to fill out your Spirit Challenge Ballots at the game.

Free Films

All films are held at 7:00 p.m. on Saturday evenings in the Medical Sciences Building.

Film Schedule:

October 8 : Flash Gordon
October 15 : Treasure of Sierra Madre
October 22 : Diva
October 29 : The Hunger
and
Nightmare on Elm Street (Part III)
November 2 : Time Bandits

Teaching Awards

Don't just bitch about bad profs,
do something for the great ones...
Nominate them for a teaching award!
Nomination forms are available at SAC.

The SAC Directory

The SAC Student Directory will contain the phone number that you gave when you picked up your student card. So if it has changed, make sure to tell the Registrar's Office.

The Hangar

"... has more kinds of beer than Baskin Robbins has ice cream"!

Drop by the campus pub just south of Sidney Smith to play darts, shuffleboard, video games, etc....

The Hangar is open nightly.

Drug Plan

You are covered by a drug plan for 80% of most prescription drugs.

Claim forms are available at the SAC office.

Municipal Election

Residence students, get enumerated at SAC.

Landlord Pissing You Off?

Housing Information Night will be held on Tuesday, October 4th, 1988, at 7:00 p.m.2 at Robarts, in the Library Sciences Auditorium.

Other Tidbits

---> Forestry 9T2 got to the Dome first.

---> The LGMB got $1000 from SAC.

---> SAC's war-room door and a certain penguin are missing. So far, there has been no response to what are purported to be nasty ransom demands.

---> The SAC Budget doesn't balance.

QUESTIONS?

Call SAC at 978-4911 or leave a message in the SAC mailbox in the EngSoc!

Sheldon J. McLaren
CHARTERED ACCOUNTANT

79 Sunrise Avenue, Toronto, Ontario M4A 1A9 (416) 750-4422

AUDITOR'S REPORT

TO THE MEMBERS
THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

I have examined the balance sheet of The University of Toronto Engineering Society as at May 31, 1988 and the statements of surplus, revenue and expenses and changes in financial position for the ten months then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I considered necessary in the circumstances, except as outlined in the following paragraph.

The organization derives certain revenues from specific functions, the completeness of which was not susceptible to satisfactory audit verification. Accordingly, my verification of these revenues was limited to amounts recorded in the records of the organization and I was not able to determine whether any adjustments might be necessary to revenues, excess of revenue over expense, assets and surplus.

In my opinion, except for the effect of adjustments, if any, which I might have determined to be necessary had I been able to satisfy myself concerning the completeness of the revenues referred to in the preceding paragraph, these financial statements present fairly the financial position of the organization as at May 31, 1988 and the results of its operations and the changes in its financial position for the ten months then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding period.

Sheldon J. McLaren
Chartered Accountant.

Toronto, Ontario.
August 17, 1987.

THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

BALANCE SHEET

As at May 31, 1988
(With comparative figures as at July 31, 1987)

Assets

	May 31 1988			July 31 1987		
	Society	Store	Total	Society	Store	Total
Current Assets						
Cash	$25,885	$ 8,259	$ 34,144	$ 8,845	$ 16,511	$ 25,356
Accounts receivable	3,200	-	3,200	7,469	-	7,469
Inventory	-	81,878	81,878	-	68,604	68,604
Prepaid expenses	2,188	2,060	4,248	2,981	2,074	5,055
	31,273	92,197	123,470	19,295	87,189	106,484
Fixed Assets						
Office furniture and equipment - net (Accumulated depreciation 1988 - $16,494; 1987 - $14,909)	3,958	2,977	6,935	4,935	3,572	8,507
	$35,231	$95,174	$130,405	$24,230	$ 90,761	$114,991

Liabilities and Surplus

Current Liabilities						
Accounts payable and accrued liabilities	$ 9,672	$ 4,197	$ 13,869	$ 7,183	$ 7,541	$ 14,724
Current portion of loan payable	774	-	774	774	-	774
	10,446	4,197	14,643	7,957	7,541	15,498
Graduation Ball - (Note 2)	9,781	-	9,781	9,781	-	9,781
Loan Payable - (Note 3)	129	-	129	774	-	774
Accumulated Surplus	14,875	90,977	105,852	5,718	83,220	88,938
	$35,231	$95,174	$130,405	$24,230	$ 90,761	$114,991

THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

STATEMENT OF SURPLUS

For the ten months ended May 31, 1988
(With comparative figures for the year ended July 31, 1987)

	1988	1987
Balance - Beginning of the Period	$ 88,938	$82,357
Excess of Revenue over Expenses During the Period	16,914	6,581
Balance - End of the Period	$105,852	$88,938

THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

STATEMENT OF REVENUE AND EXPENSES

For the ten months ended May 31, 1988
(With comparative figures for the year ended July 31, 1987)

	1988	1987
Revenue		
Fees	$ 95,793	$ 94,342
Interest on investment	291	514
Locker income	3,385	1,630
Alumni funding	24,075	12,663
Other	-	270
	123,544	109,419
Net income - Store Operations	7,757	4,117
	131,301	113,536
Expenses per Schedules		
General	26,518	26,379
Committee costs	87,869	80,576
	114,387	106,955
Excess of Revenue over Expenses for the Period	$ 16,914	$ 6,581

THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

NOTES TO FINANCIAL STATEMENTS

May 31, 1988

NOTE 1. Summary of Significant Accounting Policies and Reporting Practices

Cash

Cash does not include amounts held on deposit for committee activities and affiliated clubs. These deposits are charged to committee expenses at the time the monies are advanced by the Society.

Inventory

Inventory is valued at the lower of cost (as determined on a first-in, first-out basis) and net realizable value.

Fixed Assets

Office furniture and equipment is recorded at cost with depreciation provided on a declining balance basis at 20% per year.

NOTE 2. Graduation Ball

Each year, a portion of the orientation fees is appropriated for the graduation ball. As at May 31, 1988, the amounts appropriated are set out as follows:-

1989	$3,275
1990	3,047
1991	3,459
	$9,781

NOTE 3. Loan Payable

The loan payable is for the purchase of office equipment and is repayable in monthly instalments of $65 on account of principal and interest to July 31, 1989	$ 903
Deduct current portion	774
	$ 129

NOTE 4. Change of Year End

The Society changed its year end to May 31, 1988 to more properly coincide with the operating cycle of the Society.

Sheldon J McLaren

THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

STATEMENT OF CHANGES IN FINANCIAL POSITION

For the ten months ended May 31, 1988
(With comparative figures for the year ended July 31, 1987)

	1988	1987
Funds Provided (Used)		
Operating Activities		
Excess of revenues over expenses	$16,914	$ 6,581
Add depreciation which is not a cash item	1,585	2,127
	18,499	8,708
Investment Activities		
Purchase of fixed assets	-	(2,972)
Increase (decrease) in Grad Ball liability	-	(310)
Changes in Operating Working Capital		
Accounts receivable	4,269	(4,169)
Inventory	(13,274)	14,414
Prepaid expenses	807	(185)
Accounts payable	(855)	(23,848)
	(9,053)	(17,070)
Financing Activities		
Increase (decrease) in loan payable, net of repayments	(658)	1,548
Increase (Decrease) in Cash During the Period	8,788	(6,814)
Cash - Beginning of the Period	25,356	32,170
Cash - End of the Period	$34,144	$25,356

THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

STATEMENT OF STORE OPERATIONS

For the ten months ended May 31, 1988
(With comparative figures for the year ended July 31, 1987)

	1988	%	1987	%
Sales	$408,031	100.0	$248,906	100.0
Cost of Sales				
Inventory - beginning of the period	68,604		83,018	
Purchases	375,732		194,952	
	444,336		277,970	
Inventory - end of the period	81,878		68,604	
	362,458		209,366	
Gross Margin	45,573	11.2	39,540	15.9
Expenses				
Store salaries and employee benefits	33,855		28,212	
Repairs and maintenance	210		190	
Office and general	743		978	
Professional fees	2,465		1,000	
Insurance	731		950	
Advertising	(3,300)		3,200	
Depreciation - office equipment	595		893	
Computer store	2,517		-	
	37,816	9.3	35,423	14.3
Net Income for the Period	$ 7,757	1.9	$ 4,117	1.6

REVIEW ENGAGEMENT REPORT

TO THE MEMBERS
THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

I have prepared the statement of store operations and schedules of general expenses and committee costs for the ten months ended May 31, 1988. My review was made in accordance with generally accepted standards for review engagements and accordingly consisted primarily of enquiry, analytical procedures and discussion related to information supplied to me by the University of Toronto Engineering Society.

A review does not constitute an audit and consequently I do not express an audit opinion on these financial statements.

Based on my review, nothing has come to my attention that causes me to believe that these financial statements are not, in all material respects, in accordance with generally accepted accounting principles.

Chartered Accountant.

Toronto, Ontario.
August 17, 1988.

THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

SCHEDULE OF COMMITTEE COSTS

For the ten months ended May 31, 1988
(With comparative figures for the year ended July 31, 1987)

	1988	1987
Communications		
Handbook	$ 3,283	$1,594
Yearbook	974	(869)
Toike Oike	7,054	(1,576)
Cannon paper	2,971	2,892
Darkroom	691	377
Publications - other costs	949	1,412
	15,922	2,507
Social		
General	260	2,264
Cannon Ball	3,950	2,398
Oktoberfest	753	152
	4,963	4,814
Affiliates		
Club grants	5,900	6,505
Blue and Gold		
Cannon Guard	230	263
LGMB	1,189	620
Blue and Gold general	285	575
Godiva week	639	(452)
Homecoming	249	194
	2,592	1,200

THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

SCHEDULE OF COMMITTEE COSTS (CONTINUED)

For the ten months ended May 31, 1988
(With comparative figures for the year ended July 31, 1987)

	1988	1987
Fourth Year		
Fourth year general	$ 38	$ 5
Graduation Ball	6,908	7,105
Kipling Ritual	2,846	6,835
	9,792	13,945
Professional Development		
General	2,001	809
Engineering congress	4,015	2,547
APEO	310	92
Regional conference	509	352
	6,835	3,800
General		
Employment committee	42,020	46,690
Orientation	(2,710)	(37)
Pub - general	2,019	(2,180)
- SUDS	(2,353)	3,921
Women in Engineering	221	150
First year	65	97
Skule Nite	1,466	1,206
Special projects	507	(1,968)
OEDC	-	803
Ski trip	-	(1,160)
Centennial	-	283
Computer committee	630	-
	41,865	47,805
Total	$87,869	$80,576

THE UNIVERSITY OF TORONTO ENGINEERING SOCIETY

SCHEDULE OF GENERAL EXPENSES

For the ten months ended May 31, 1988
(With comparative figures for the year ended July 31, 1987)

	1988	1987
Depreciation - office furniture and equipment	$ 990	$ 1,234
Executive and Council expenses	664	994
Gifts, donations and awards	1,107	515
Insurance	1,260	438
Interest and bank charges	556	520
Professional fees	4,250	3,635
General	65	328
Office salary and employee benefits	13,600	13,349
Postage	192	197
Printing and stationery	2,276	2,109
Repairs and upkeep	366	1,434
Telephone	1,192	1,626
	$26,518	$26,379

UNIVERSITY OF TORONTO ENGINEERING SOCIETY
BUDGET 1988 - 89

REVENUE

Engineering Society Fee	$ 54,395 00
Engineering Employment Liason Fee	59,125 00
Locker Revenue	4,140 00
Gradball Fund	3,275 00
Alumni	23,800 00
Orientation Frosh kits	17,640 00
Surplus from 1987 - 88	9,157 00
	$171,532 00 $171,532 00

EXPENSES

Administration

Audit Fees	$ 3,000 00
Elections	300 00
Executive and Full Council Expenses	800 00
President's expense	200 00
Gifts and Awards	400 00
Insurance	1,250 00
Bank Charges	780 00
Legal Fees	1,250 00
Postage	275 00
Office Equipment and Supplies	2,750 00
Salaries	15,500 00
Telephones	1,650 00
Repair and Upkeep	1,000 00
Office Renovations	1,500 00
Office Renovations (Alumni)	1,000 00
Laser Printer	3,050 00
Miscellaneous	150 00
	$ 34,855 00

Communications

Cannon	$ 850 00
Cannon (Alumni)	2,000 00
Yearbook (Alumni)	1,000 00
Yearbook (Frosh)	3,150 00
Handbook/Calender	3,000 00
Handbook/Calender (Frosh)	630 00
Toike Oike	1,750 00
Darkroom	700 00
General	250 00
	$ 13,330 00

Fourth Year

Kipling Ritual	$ 3,000 00
Gradball	1,100 00
Gradball (alumni)	2,800 00
Gradball Fund	3,275 00
	$ 10,175 00

Professional Development

APEO Conference	$ 350 00
Speakers	100 00
OEDC (Alumni)	1,200 00
Gumby Party	100 00
	$ 1,750 00

External

CCES	$ 1,000 00
CCES (Alumni)	2,000 00
RESSA	400 00
ESSCO	600 00
Project Magazine	787 50
	$ 4,787 50

Blue and Gold

Homecoming	$ 200 00
Godiva Week	300 00
Cannon Guard	200 00
LGMB	250 00
LGMB (Alumni)	300 00
LGMB Record (Alumni)	600 00
General	650 00
	$ 2,500 00

Social

Oktoberfest	$ 350 00
Cannon Ball	1,800 00
Cannon Ball (Alumni)	1,800 00
General	300 00
	$ 4,250 00

Finance

Gradball Investment (Frosh)	$ 3,150 00
Locker Purchase	4,000 00
	$ 7,150 00

General

Engineering Employment Liason	$ 59,125 00
Employment	250 00
First Year	100 00
High School Liason	100 00
Women's Committee	300 00
Club Grants	1,400 00
Club Grants (Alumni)	5,700 00
Orientation	2,700 00
Orientation (Alumni)	3,500 00
Orientation (Frosh)	16,122 50
Special Projects	150 00
Skule Nite	1,650 00
Skule Nite (Alumni)	1,300 00
Computer Committee	300 00
	$ 92,697 50

TOTAL REVENUE	$171,532 00
TOTAL EXPENDITURES	$171,495 00
PROJECTED NET SURPLUS	$ 37 00

SCI & TECH

BIOLUMINESCENCE

Certain organisms, from bacteria to beetles, have made use of chemiluminescent reactions for attracting mates, attracting prey, or as a warning to others of its species. One of the best known light-emitting organisms is the firefly. In this creature, the oxidation of luciferin in the presence of Mg 2+ and the enzyme luciferase emits a green/yellow light in the equation:

luciferin + 02 + ATP
--->
oxyluciferin + ADP + light

This reaction requires 10 to 13 moles of ATP.

The produced oxyluciferin inactivates the *luciferase*, causing the reaction to stop. Coenzyme A (CoA) removes the inhibiting oxyluciferin from the luciferase. The more CoA present, the greater the luminoscity.

The firefly uses its luminescence mainly for the attraction of mates. The male will flash his light, and after a fixed amount of time, (depending on the various species), the female will flash back. If the light from a flashlight is flashed at the correct interval, the firefly will immediately go to the light, believing to to be the female.

The most amazing thing about this creature (and all chemiluminescent reactions) is the efficiency level. No heat is produced whatsoever, and the reaction is 98% efficient. Nothing man has devised can match this. If we could develop an economical way to harness this source of lighting, our energy consumption would be drastically slashed, all on account of a 1cm insect.

Scientists at NASA have developed a method to use luciferin and O2 to detect life in the harshest of environments (named 'The Wolf Trap', after its inventor, Wolf Vishniac). On the United States' unmanned missions to Mars, a sample of soil was planned to be picked up and allowed to mix with a high concentration of the luciferin solution. If any ATP was present, the sensitive photodetectors on the craft would have been able to pick it up. Unfortunately, the government introduced cut-backs, and, as this was only one of four methods for detecting life, it was dropped in favour of the others. It was later tested in Antarctica underr conditions similar to Mars and was determined to be a great success. Who knows what it would have found on Mars?

Fireflics are by no means the only insects that luminesce. Some beetles of the genus Pyrophorus are the brightest luminescent organisms known. The light produced by three of these bugs is enough to read this newspaper by. There also exists a species that has two birght whitish spots at its front end and one red at the rear. The bug's startling resemblance to a small car gives rise to its being nicknamed "Ford Bugs".

Recently, at the University of California, genetic engineers have been able to probe the firefly cell and isolate the gene that causes the insect to glow. Through gene splicing, they have been able to introduce this gene into a plant-infected bacterium called Agrobacterium tumefaciens. This bacterium, with its new glow-in-the-dark characteristic, were allowed to infect tobacco plant cells. As a plant grows, certain genes are activated/deactivated. The 'glow' gene, being chemically linked to the plant genes, allows scientists to trace patterns of growth for specific sections of the plant.

The uses of bioluminescence have often been bizarre. In World War II, the clam Cypridina was dried and carried by Japanese soldiers. When times of low-light map reading became necessary, water was poured over the clam to produce minute amounts of light--only enough to read by, and not enough to be spotted by the enemy.

From being thought of as ghosts, to a scientist's dream become reality, bioluminescence catches the interest of us all. What comes natural to many insects, we are just beginning to be able to understand and duplicate. We are always looking towards new ways of harnessing the various forms of energy. And, with its high efficiency level, chemiluminescence could very well become the light of the future.

(The actual mechanisms behind the chemiluminescent reaction will be discussed in a subsequent article).

Kevin Linfield
Eng Sci 9T1

DRUXY'S FAMOUS DELI
DRUXY'S
FAMOUS DELI SANDWICHES
SANDWICHES
For breakfast, lunch, dinner or a snack try Druxy's Famous Deli Sandwiches today We serve great deli food and we don't keep you waiting
GREAT DELI FOOD...FAST

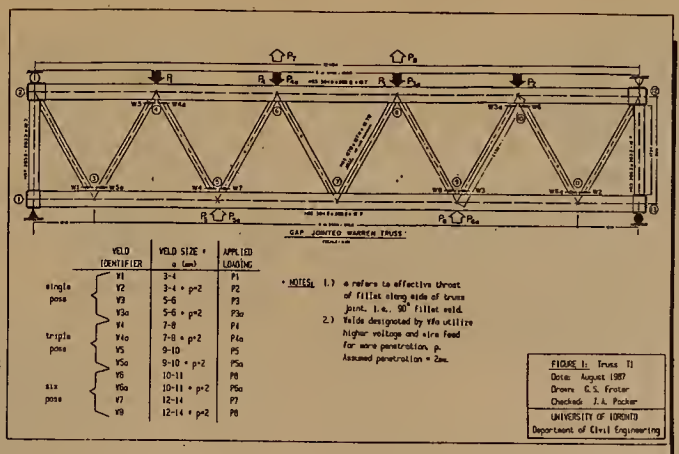
A VIEW THROUGH THE WINDOW

A periodic report on research projects underway in the Civil Engineering Department's Structural Models Laboratories.

How many times have you paused at the viewing windows of the Structural Models Labs and wondered exactly what type of research was being done down there? This series of articles will attempt to answer some of those questions.

The Sandford Fleming Building Structural Lab is currently dominated by a 12.5m long by 2m high steel Warren Truss. This is the first of three similar specimens in a research program sponsored by an international steel producers organization, CIDECT. CIDECT is comprised of sixteen members from twelve different countries across Europe and North America, including Canada and Japan. Each of these members is a leading manufacturer of Hollow Structural Sections (HSS). Material donated for this project came from two Canadian producers: STELCO, who supplied the 12.5m long (8" X 12") chord members, and IPSCO (Western Canada's largest steel maker), who provided the web members (5" X 5"). Fabrication was sent out to tender, and the contract was awarded to Dominion Bridge, fabricators for the Sky Dome roof.

CIDECT has been sponsoring and coordinating research programs since 1963. These programs attempt to improve hollow section joint design and to assess other HSS properties such as fatigue behaviour or the increased load bearing capacity and fire resistance of concrete-filled HSS.


GAP JOINTED WARREN TRUSS
WELD IDENTIFIER
WELD SIZE a (mm)
APPLIED LOADING
single pass
triple pass
six pass
NOTES: 1.) a refers to effective throat of fillet along side of truss joint. i.e. 90° fillet weld.
2.) Welds designated by Wfa utilize higher voltage and wire feed for more penetration. p. Assumed penetration = 2mm.
FIGURE 1: Truss 11
Date: August 1987
Drawn: G.S. Frater
Checked: J.A. Packer
UNIVERSITY OF TORONTO
Department of Civil Engineering

CIDECT's main goal in funding this research project is to improve the design of fillet weldments (welded connections between adjoining HSS members) in large-scale HSS trusses. At present, the required weld size (thickness of fillet weld = a) is related to the thickness of the adjoining web member (t) by $a = 1.4 * t$. It is believed that this equation, for the steel fabricators, is on the conservative side, and that further testing will allow for refinement.

Truss tests will be run under the watchful eye of PhD student George Frater, with Civil Department supervision by Prof. J. A. Packer (Associate Chairman). Frater's PhD thesis will surpass the scope of CIDECT's main research interest, as he will study the total performance of welded hollow structural section trusses.

The planned testing program will utilize varied loading patterns in order to accentuate failure loads in different connectors. After failure, joints will be cleaned and then repaired using flux cored arc welding (FCAW). Quality of the weldment will be insured by using magnetic particle weld inspection for crater cracks, undercuts, and porosity identification. Frater predicts that each truss may be tested up to twelve times and require three months for testing.

Equally impressive is the testing equipment being used. The main static load is applied by the 2750kN MTS (Material Testing System) machine. The green meccano-like supports straddling the truss provide lateral bracing to prevent lateral buckling of the compression chord. The loading point incorporates a hydraulic jacking system inside the chord member to prevent collapse of the section. All members and critical joints have been strain-gauged (electronic recording of deformations) to provide information on the performance of the complete specimen during each testing phase.

Lab coordination is by Bill Morrison (Lab Foreman) and Renzo Basset (Lab Manager), with electronics under the supervision of Peter Heliopoulos.

The Cannon wishes all those connected with the project good luck over the testing period, and invites spectators to watch the proceedings.

Neil Hutchings

CSCE Chairman

COMPUTER STORE MOVES TO KOFFLER CENTRE

During the summer, while many other changes were going on in the Engineering Society, the Engineering Computer Store, formerly located in Room B670 of the Sandford Fleming Building, moved across St. George Street to the U of T Computer Store, above the Bookroom in the Koffler Centre.

The deals that were made with major computer manufacturers by the Engineering Society's Computer Committee will now be available to ALL U of T students.

Further information can be obtained by contacting the U of T Computer Store.

HAVE YOU MET JULIE?

Julie Wilkinson joined us this summer as our new Administrative Assistant in the Engineering Society offices.

Julie studied Math at Aberdeen University in Scotland.

During her spare time, and most of the summer, she enjoys racing her TNT-Kwikasair Comet Camaro. She likes her job at EngSoc because of the freedom and time that it gives her during the summer in order to race.

U of T DAY 88
Saturday, October 15

SOMETHING FOR EVERYONE AT U OF T DAY, OCTOBER 15

Whether your interests lie in sports, medieval history, the latest advances in science and technology, or health and fitness, the University of Toronto has something to offer you on U of T Day. On October 15, from 10 am to 4 pm, the University will be opening its doors to the public.

This is an opportunity to:

- fly a flight simulator, use a magnetic resonance imaging machine and lasers to "look" inside your body; watch a demonstration of the world's fastest computer.
- entertain your children at the Children's Fair - clowns, face-painting, pony rides and scientific experiments.
- learn about cancer prevention, nutrition, diet and osteoporosis, vitamin A and cancer treatment in the medical lecture series.
- watch demonstrations of kendo, tai-chi, karate, synchronized swimming and diving at the Athletics Centre.
- get the latest tips on crime prevention from U of T Police.
- take an architectural or historical tour of the campus.
- hear University of Toronto professors talk about free trade (John Crispo), the economy (Carl Beigie) or franchising (Jerry White) at the Faculty of Management.
- find out how business is dealing with such issues as AIDS in the workplace and drug screening on the job by viewing films at the Centre of Industrial Relations.
- learn about the threat to libraries of disintegrating paper, by viewing the film, "Slow Fires."
- learn about new directions in teacher development.

These are just a few of the many activities planned for U of T Day.

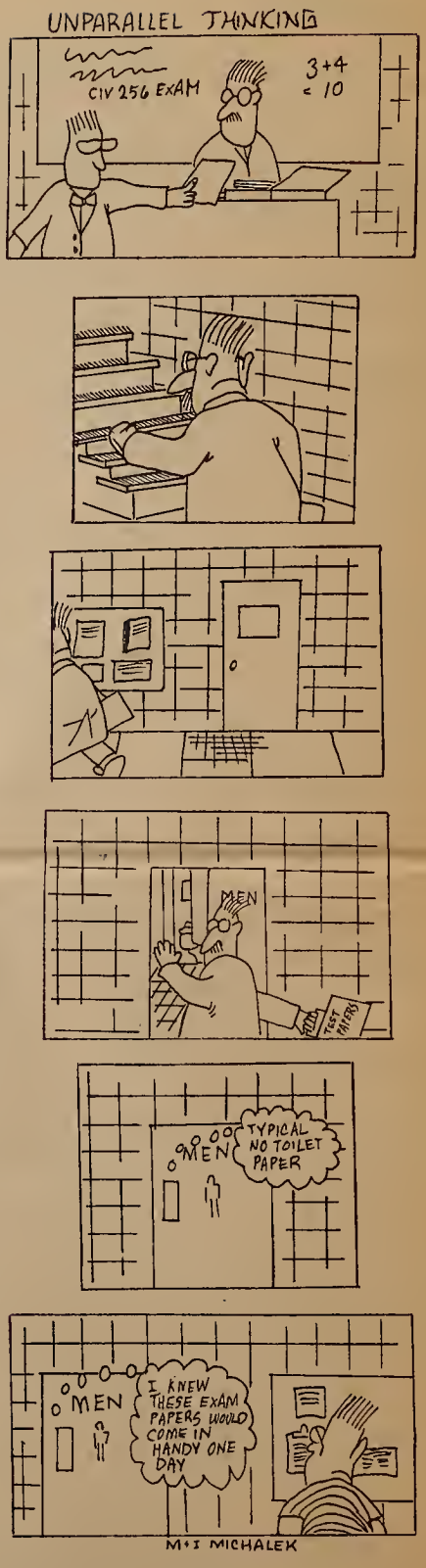
For more information, call 978-2021 or 978-5367.

ENGINEERING RECEIVES $6.2 MILLION

Lorne Pratt, who graduated in 1922 from the Department of Civil Engineering of the University of Toronto, left $6.2 million dollars to the University which would have been donated after the death of his wife. However, Lucille Pratt wanted to see her husband's name on an Engineering Building before her death, and she also felt that the money could be put to use to solve the problems of overcrowding that are presently being experienced within the University.

The unveiling of a model of the proposed $9 million building took place on Thursday, September 22, 1988 in the Atrium of Sandford Fleming by Mrs. Pratt herself, and her sister Margaret Robinson.

Mrs. Lucille Pratt, her sister, Margaret Robinson, and other notables were entertained at a formal dinner given by U of T President George Connell last week. Seated at the head table were our own EngSoc President, Keren Morehead, our Assistant Dean, Malcolm McGrath, John Black Aird, Chancellor, and Pauline McGibbon, former Chancellor. Also present were Dean Heinke and his wife, Karlene, and the EngSci Chairman.



The Arthur Andersen & Co. Lecture Series

Sponsored Jointly By

The University of Toronto
&
Arthur Andersen & Co.

This Lecture Series is designed to develop better relations between the business community and the University. Students are given the opportunity to hear and meet prominent Canadians in an informal setting.

CHAINSAW MASS

Horror shows, are they really just senseless splatter flicks or are they propagandistic parables designed to shape our thoughts and control our behavior.

To answer this much asked question I will cite several examples for you to ponder.

First, in the Friday the 13th series (Parts I-DCLXVI) an unsuspecting couple begins to, now how can I put this tastefully, bump uglies, and before you can say ' Was it good for you too?', Jesus, I mean Jason, enters, and with his trusty spear, pokes of them(literally). Another interesting point to note about this series is how Jason easily slaughters a half-dozen jock-types only to be 'killed' in the end by the frail little girl with the good morals.

Next, we move to the Nightmare on Elm Street films. While not as shamefully blatant as the 13th series an example or two can still be found; a couple, after a vigorous session of consummating their friendship, dozes off, allowing Freddy to appear and do a little fingering of his own.

Now, the last example I will mention (there are countless others, but THE CANNON is always so swamped with articles that space is limited) is from the movie Hellraiser. In this film the corpse of an ex-lover recruits a woman's help. In his service, she frequents single's bars and lures men back to her place for a little poke in the whiskers and then, well I don't want to spoil the movie for you, so let's just say the victim's blood doesn't exactly flow to where they wanted it to. Enough said.

By now, a common theme should be becoming obvious--Thou shall not, yes, that's right, fornicate. Probabilistically speaking, there is a strong positive correlation (if not a downright causation) between pushin' up Daisy and pushing up daisies.

Who is behind this cleverly disguised plot to control the minds of unsuspecting fans of gore and bloodletting? Certain sources of mine have named an individual whose identity I am not at liberty to disclose at this time. Oh, what the hell? It's the Pope. Hey, you don't have to believe me if you don't want to, but his views on premarital sex are well known, and his so called 'Papal Visits' could, in reality, be scouting tours for locations of future splatter-parables.

Like I said, believe what you want, but be warned: If this moral campaign is successful, we could be in for a whole slew of 'Thou shall not covet thy neighbour's house' splatter flicks'--"Gee Martha, that sure is a nice house the Smiths have," said George, oblivious to the sounds of chainsaws drawing closer.

Wayne H. Bell

Engineering Alumni Association

University of Toronto

Telethon '88

Our Best Effort Yet

Thanks to the efforts of 138 students, several alumni and the staff of the Department of Development, Engineering mounted its most successful Telethon ever during September.

Herewith the results:

Club	No. Callers	Amount Pledged
Industrial	25	23,030
Electrical	35	19,940
Geo & MMS	27	14,390
Chemical	19	10,240
Engineering Science	14	9,735
Civil	6	6,453
Mechanical	8	6,220
	137	89,978

Last year's telethon raised $47,625. The dramatic increase is due, in part, to calling not only non-donors, but also urging current donors to increase their giving.

For the fifth year in a row, the Industrial Club wins the Engineering Alumni prize of $200. Congratulations!

The top callers on each evening were

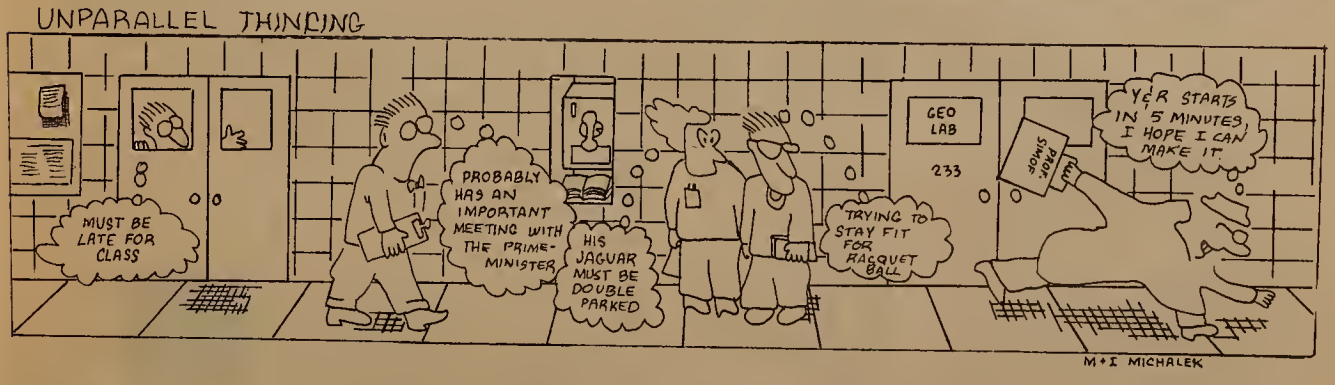
Name	Amount Raised	Club
Michael Hipwell	3165	Industrial
Imtiaz Ibrahim	1835	Civil
Bill Lee	1720	MMS
John Lazarou	1550	Electrical
Ken Attard	1310	Chemical
Chris Thompson	1275	Eng. Sci.
Tim Hrasawa	1110	Mechanical

As you can see, the super sales type was Michael Hipwell; he wins the $100 Alumni award. Well done, Michael. You'll go far.

Engineering at U of T is indeed proud of this dedicated group of students. They have demonstrated the Second Mile spirit in a very tangible way. We are in their debt.

Many, many thanks

Malcolm McGrath
Assistant Dean
Alumni Liaison


UNPARALLEL THINKING
MUST BE LATE FOR CLASS
PROBABLY HAS AN IMPORTANT MEETING WITH THE PRIME-MINISTER
HIS JAGUAR MUST BE DOUBLE PARKED
GEO LAB
233
TRYING TO STAY FIT FOR RACQUET BALL
PROF SMOKE
YER STARTS IN 5 MINUTES I HOPE I CAN MAKE IT
M+I MICHALEK

MR. BLUE CONTEST: THURSDAY OCTOBER 13TH

WANTED: ALL MALE TYPES!
Mr. Blue could be YOU! Call Debbie Smith or Adam Growe at 978 - 4911, Blue & White Society.

E N T E R T A I N M E N T

Welcome to this year's first compact disc review. In this issue, I'll only be reviewing two CD singles. Both CD's are by a group called Eighth Wonder. Eighth Wonder's singer, Patsy Kensit, has a voice with a beautiful attention-grabbing clarity to it. Her seductive voice is well brought out in both English and in French. Eighth Wonder is a band which has quickly risen in popularity in England and is starting to edge its way into North America. Both of these CD's are from their forthcoming album "Fearless".

C D

I'm Not Scared
(3 inch single)

Produced by the Pet Shop Boys and Phil Harding, this Austrian import contains three tracks. All three songs are different versions of the same song. The first is a dance mix, the second a regular length version, and the last is a French version. The French version ("J'ai Pas Peur") is the smoothest of the three having the most constant volume level for the background sounds and a longer delay effect on the vocals. The regular length version is a toned down version (think A.M. radio) withouth too many innovations. The dance version is by far the best. It makes good use of stereo panning and of background fills. An excellent beat carries the song through this eight minute song. Sound clarity on this CD is excellent and well worth the effort of finding the CD.

Cross My Heart
(3 inch single)

Produced by Pete Hammond and Eighth Wonder, this second Austrian impoort contains four tracks. Once again, the CD starts off with a dance mix (this time a guitar has been added). A little more experimentation is made in this song, including a guitar solo (and for that matter, the guitar itself) which is not on the normal version of this song (Track Two). The third track is a song called "Let Me In" which is a slower beat song (which is not as dancey as the rest). Still, it's a good song all in all--they even brought back the guitar! The fourth track contains another version (no, not a French version) of "Cross My Heart"--this time an instrumental. This version can be added to the dance mix list (only that it's a little shorter than the first at four minutes and 32 seconds). THey took the guitar away again. Oh, well. Verdict: Good mixing and clarity for all of the songs.

That's it for this issue. See you in the next!

Carlos Iglesias
CIV 9T0

CONCERT REVIEW

by Seymour Glass

On September 15, 1988, Amnesty International presented their much awaited and sold out Human Rights Now! Concert at Maple Leaf Gardens as part of their campaign to increase awareness of the Universal Declaration of Human Rights.

I arrived at the half-empty Gardens at four-thirty, and the concert began promptly at five with everybody singing Bob Marley's "Get Up, Stand Up... Stand Up for Your Rights".

Immediately after the introduction, the first performer was Youssou N'Dour and his African rhythm band, who seemed to delight the crowd with his up-beat music and joyous vocals.

Then came our own very zany K.D. Lang who showed us why she's one of our best country and western singers-performers-dancers, and who deserved the standing ovation that she received after singing Roy Orbison's "Crying".

In a sharp contrast, Tracy Chapman, possibly the best American folk singer today, provided quite a melancholic set with her soft guitar playing and her sad voice, and the instantly recognizable "Fast Cars".

Then came Gabriel.

His set ranged from the theatrics of "Shock the Monkey" to the solemness of "Games Without Frontiers", a song dedicated to the people of Nicaragua, and "Biko", a homage to the black South African leader, Stephan Biko. This performance was a concert in itself!

The next set featured Sting and his jazz band, whose performances of Hendrix's "Little Wing" and the Cueca "They Dance Alone", a song about the 'disappeared' in Chile, stood out from his other jazz songs.

Finally, the Boss provided a very fast and energetic closing set that lasted until one in the morning, where he performed "Born in the U.S.A.", "War" and "Dancing in the Dark". I am sure that everyone was very impressed when Bruce Springsteen spoke softly and said something about the importance of sharing our freedom with other people as he introduced "My/Your Hometown".

In the end, everyone came out again to sing "Get Up, Stand Up", and then they waved good-bye.

After the concert, I walked around and heard people talking and being interviewed. It seemed that some people came to the concert to support Amnesty International, others came to see their favourite musicians, or to hear the music, but whatever their reasons, I think that everyone there left with some appreciation about the importance of human rights.

SPACENEWS

Vol. 1, No. 1.
September 1988.

Editor's Column

Welcome to the first issue of **SPACENEWS**, a bimonthly report on space news and technology. This newsletter is written by University students from across Canada and is published in several student newspapers.

My motivation for the newsletter arose several months ago when I attended a Symposium organized by the medical school at the University of Ottawa. Students from across Canada attended seminars on various topics in medicine. The extremely successful symposium achieved several objectives.

1. It allowed students to learn about state of the art research in medicine.
2. It provided students an opportunity to meet other students from different universities.
3. Provided students with many athletic intramural activities, and allowed time to visit the city.
4. Provided a dinner and dance at the end which was superb.

It seemed to me that there are few similar opportunities for Canadian engineering students of **all disciplines** to meet and learn in a professional environment. The idea of starting an engineering symposium was tempting for months, but it requires the support of many students. As an avid space enthusiast, it suddenly dawned on me that a space newsletter would be an ideal way for students across Canada to communicate. Space is a topic that interests most young engineers, and the space industry employs engineers from all disciplines.

I hope you enjoy this first issue of **SPACENEWS**. I encourage you to send in articles on space to share with other students. Please indicate your academic program, the year you expect to graduate, and your University. Perhaps some day we will all meet for a 'Space Symposium' at some Canadian university over a weekend !

With Best Regards,

Yuri Quintana.
Electrical Eng. BaSc'88 (Waterloo)
Systems Design Eng. MaSc'89 (Waterloo)

In The Next Issue ...

A report from the National Research Council of Canada on the **Canadian Space Program !**

SPACENEWS is a bimonthly Canadian publication on space news and technology. Although every effort is made to ensure accuracy, SPACENEWS is not responsible for any inaccuracies or omissions. All material received becomes property of SPACENEWS and the editor reserves the right to edit and print it. Opinions expressed in articles are those of the authors.
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All correspondence should be mailed to SPACENEWS, 455 Regency Crescent, Waterloo, Ontario, Canada, N2T 1P2.
Editor-in-Chief: Yuri Quintana
Faculty Editors: Dr. G.L. Greig (University of Waterloo), Ann Gawman (IBM Canada Ltd).

SN

U.S.A.

- The space shuttle *Discovery's* 3 main engines successfully passed the Flight Readiness Firing on August 10. Launch date is scheduled for September 29, 1988.
- NASA is asking U.S. school children to select a name for the replacement space shuttle. The winning entry will be announced next May.
- President Reagan announced that the winning entry for the name of the space station is **Freedom**.
- The "Mars Project" society of scientists revealed that in 1976 NASA's Viking spacecraft discovered a massive rock on the surface of Mars in the shape of a human face. Former astronaut Brian O'Leary, an expert on Mars has approached the U.S.S.R. in hopes of having the area examined by the first of two Soviet probes bound for Mars this year.

- 90 international scientists gathered at the University of New Hampshire to plan the 1992 'International Space Year' which is to coincide with the 500th anniversary of Christopher Columbus' voyage to the *New World*.

U.S.S.R.

- Two cosmonauts successfully returned to earth from a week long mission to the Soviet space station MIR after two aborted re-entry attempts due to failing stabilizing rockets. The re-entry capsule was reported to only have 48 hours of oxygen. A third cosmonaut remained on MIR to monitor the health of two cosmonauts that have been in space for 8 months.
- Frenchman Jean Loup Chretien will be on a month long mission to MIR in November. He is scheduled to become the first non-Soviet, non-American to take part in a space walk.
- International space artists gathered in Iceland to sketch the volcanic surface which is similar to that of Mars. The sketches will be shown in Moscow next April when Phobos 1 and Phobos 2, the exploration satellites launched in July, arrive to orbit the Martian moon Phobos.

Japan

- Japan will rocket propel from an air balloon a 2 meter model of a space shuttle. It will attain a height of 80 km. and reach speeds on Mach 4.

Brazil

- Brazil and China will jointly develop two remote sensing satellites to monitor the health of crops and natural resources. They will be launched in 1992 using China's Long March 2 booster rockets.

Europe

- The British government suspended its funding for the spaceplane HOTOL. Alan Bond who sold the design of the engines to Rolls-Royce is having problems attracting industry investment since the design is classified top-secret.
- The European Space Agency (ESA) using an Ariane 3 launch vehicle placed two comsats in orbit, India's INSAT-1C and ESA's Eutelsat 1-F5.
- L'Air Liquide and Aerospatiale have begun work on Ariane 5 that is designed to carry 150 tons of propellant, 10 times more than Ariane 4.
- Italy's newly formed space agency will use American launch vehicles to send into orbit the first satellite Lageos 2 carrying the agency's banner.

Australia

- Australian firms have formed CYSA (Cape York Space Agency) to raise international funds to build a spaceport in Cape York, Australia's closest point to the equator.
- University of Queensland had its contract renewed to perform wind tunnel tests on NASA's model spaceplane. The facility can produce winds up to 8 km/second.

Costa Rica

- Costa Rican shuttlenaut Franklin Chang Diaz is proposing a Pan-American Space Organization (PASO) to promote cooperation between Latin American countries, particularly in satellite tracking.

Possible Escape for Astronauts

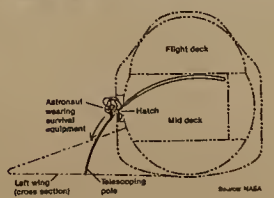
The National Aeronautics and Space Administration (NASA) is installing a 10-foot telescoping pole in each space-shuttle orbiter to help the crew bail out in an emergency that might prevent the orbiter from landing safely. The pole will guide each astronaut jumping from mid-deck to pass below the orbiter's left wing. Without the pole, an escaping astronaut would likely hit the wing or some part of the orbiter.

The pole is part of an escape system that is standard equipment for all future shuttle flights, including that of *Discovery*, scheduled for launch on September 29,1988. The complete system allows the crew to jettison the hatch side of the orbiter, and includes a helmeted pressure suit and survival equipment that each crew member must wear during launch and landing.

Rogers Commission Urging

The entire system, which costs some $75 million to develop and install in the three present orbiter craft, was devised in response to a recommendation by the Presidential Commission on the Space Shuttle Challenger Accident (the Rogers Commission).

The commission urged NASA to "make all efforts to provide a crew escape system for use during controlled gliding flight". Since ejection seats were removed from the first orbiter, the *Columbia*, after the shuttle's initial four test flights, there has been no way out for the crew in an emergency.



According to Robert Rice, NASA's crew escape project manager, the escape system can be used only in a controlled flight below 20 000 feet - either when the orbiter is coming in to land at the end of a mission, or when a launch has been aborted.

Rice said however that the system will not work within the first two minutes after lift-off, when the solid rocket boosters are still firing - as was the case in the *Challenger* disaster. Nor can it be used if the orbiter is descending out of control.

Emergence Rescue

In an emergency where the crew can get the orbiter into a controlled glide above 25 000 feet, they would set the autopilot to make the vehicle descend at the minimum air speed of 175 knots (325 km/h) - about two thirds the vehicle's normal speed at that altitude. At 25 000 feet, the crew would vent the cabin to bring about ambient pressure, and at 20 000 feet activate explosive bolts to blow the cabin hatch cover away from the orbiter.

A pull on the telescoping pole's trigger would shoot the spring-loaded pole from its housing on the mid-deck ceiling out of the open hatch and lock it into its extended position within a second. Each crew member would in turn hook his or her parachute harness onto a ring shaped attachment on the pole, kneel in the hatch, and roll forward through the opening.

The procedure would allow an entire crew of eight to evacuate the orbiter in about 1-1/2 minutes, well before the orbiter reached the minimum bail-out altitude of 5000 feet.

Trudy E. Bell.

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SHINERAMA TOTALS 1988

Faculty/College	Total	$ Per Shiner
Engineering	$10,149.00	$25
Vic	5,967.38	13
St. Mike's	3,725.44	20
Trinity	3,381.21	19
U.C.	4,251.25	21
New	2,058.13	14
Pharmacy	1,653.59	16
Rehab. Meds	1,184.66	30
Other Events	1,770.40	
Total	$34,141.06	

The 25th Anniversary of Shinerama saw mixed results at U of T. The Shinerama Day total was up by $4000 from last year, but unfortunately, totals for other events dropped significantly. We had a record number of participants (almost 1800 F!rosh), many of whom stayed out until after the Shinerama Committee was ready to pack up!

We did have two new events this year: a "Win, Lose or Draw" Contest held at SUDS, where 'someone and two dumb f!rosh' won out in a vocal (and almost physical) match against the "SEXECS". Everybody had a good time, and we can now all draw "Bambi meets Godzilla". The Comedy Night at Yuk Yuk's was also a success; Franco, the comedians, and Gonzo provided us with two hours of entertainment (and there was beer!).

The Shinerama Committee deserves a vote of thanks (and a round of applause) as does the Orientation Committee, for the time and effort which made Shinerama a success this year.

THANK YOU to all the F!rosh who did so much to raise money for Cystic Fibrosis Research.

Heather Hinton

Joseph Erastostene

LOTTERY PRIZE WINNERS:

1. Max	Binoculars
2. Andrew Wyllie	White Water Rafting Trip
3. R. Gomes	2 VIA Rail youth passes
4. David Smith	Men's Quartz Watch
5. Tom Schuck	Women's Quartz Watch
6. Christina Heidon	$50 Certificate - Athlete's World
7. Azay Sinha	Professional Calculator
8. Mark Nash	Brunch at Holiday Inn
9. Robert Assaly	2 Passes - Toronto Truck Theatre
10. Rory Shim	Quartz Watch
11. Lysander Lim	Canada's Wonderland Passes
12. Angie Gaudio	Calculator - Radio Shack
13. Gilbert Azeredo	$25 Certificate - Ginsberg and Wong
14. Danny Candone	Yuk Yuk's Album
15. Bill MacGregor	Yuk Yuk's Album
16. David Drasck	Yuk Yuk's Album
17. Wayne Cooley	Yuk Yuk's Album
18. Brian Kamey	Yuk Yuk's Album
19. Adam Coull	Yuk Yuk's Album
20. Kelly Bell	Yuk Yuk's Album